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# China Through the Lens of NLP

A Text Analysis of Qiushi and  
Aisixiang



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## Table of Contents

<b>Overview .....</b>	<b>3</b>
<b>Data .....</b>	<b>4</b>
<i>Data Collection .....</i>	<i>4</i>
<i>Initial Processing.....</i>	<i>4</i>
<i>Publication Volume .....</i>	<i>5</i>
<b>Authors.....</b>	<b>7</b>
<b>Key Topics.....</b>	<b>10</b>
<b>Economy .....</b>	<b>13</b>
<i>Frequency Analysis .....</i>	<i>13</i>
<i>Sentiment Analysis.....</i>	<i>16</i>
<i>Contemporary Economic Data .....</i>	<i>17</i>
<b>BRI and Global Initiatives.....</b>	<b>19</b>
<i>Frequency Analysis .....</i>	<i>19</i>
<i>Sentiment Analysis.....</i>	<i>20</i>
<b>Conclusion .....</b>	<b>22</b>



## Overview

The inner workings of the Chinese Communist Party (CCP) are notoriously opaque, and outsiders constantly struggle to understand what is going on in China, and how they should act in response. Having served a Chinese-speaking mission and interned with the U.S. Department of State in Indonesia and a civil society organization in Taiwan, I am keenly interested in international relations and gaining greater understanding of China.

In this project, I analyzed articles from two primary sources: Qiushi and Aisixiang. Qiushi is the Chinese Communist Party's (CCP) flagship ideological magazine. Aisixiang is a Chinese think tank that was identified as significant by a Chinese consulting company. I web-scraped all the articles they posted from 2019 through 2023, and used them to perform a variety of analyses, looking at the main writers, key topics, and trends around key terms like "economy" or the Belt and Road Initiative.

The results of this exploration were largely in line with things I already knew about the CCP, but they served as empirical evidence for my hypotheses, albeit with a few surprises. The application of the methods I developed to specific topics are discussed starting on page 12.

# Data

## Data Collection

In addition to their inherent significance, Qiushi and Aisixiang were also ideal targets because they have their articles stored in such a way that reduced the complexity of scraping them. For Qiushi, a series of webpages contain the various years, editions, and articles, which I was able to scrape recursively using BeautifulSoup and an AI package that was trained to information from news articles. Aisixiang had all of their authors listed, each with an individual webpage that included links all of their published pieces. However, the scale of Aisixiang (~56,000 articles, as compared to Qiushi's ~2,000) required a different approach. I designed a Scrappy spider, which was able to scrape at a rate approximately 14 times faster than my initial BeautifulSoup-based approach.

## Initial Processing

A number of steps were taken to validate the articles, including the following:

- Drop articles with no text
  - o For Qiushi, these were almost exclusively typically pdfs of economic figures or event attendee lists.
  - o For Aisixiang, I did not carefully examine the articles missing text, but it was a tiny fraction of the overall articles, so I assume it was essentially random.
- Drop articles with duplicate URLs
  - o For Aisixiang, if an article had multiple authors, it would show up on both of their pages and be scraped twice.
  - o For Qiushi, there appeared to be repeat links to certain articles, notably several written by Xi Jinping.
- Drop “top-level” articles
  - o With Qiushi specifically, they have “super” articles that contain two to three other topically related articles on a single webpage. However, those articles also have separate links for the standalone article on the edition webpage, resulting in them being double counted. Finding a way to programmatically identify these top-level articles was tricky, but examining the text of several I had already identified, they all shared the editor's note “编者按.” Searching for articles with that phrase yielded 16 results, 13 of which were really “top-level” articles, which I then dropped.
- Restrict time to 2019-2023
  - o Qiushi only has data available from 2019 onwards, so for ease of comparison I restricted Aisixiang to the same time period. Most of the work for this project was completed prior to the completion of the first quarter of 2024, so impose an upper bound of 2023.

- Varied processing: The process above was used for the majority of the analyses, which were focused on the text content, but other articles were dropped in specific circumstances (i.e. articles without an author listed were excluded from analysis on author importance).

	Qiushi	Aisixiang
<b>Starting Total</b>	<b>2181</b>	<b>56245</b>
Drop textless	2058	55832
Drop duplicates	2042	55412
Drop top-level	2029	55412
Restrict time	1998	13361
<b>Resulting Total</b>	<b>1998</b>	<b>13361</b>

Table 1: Number of articles remaining after each step of the validation process.

## Publication Volume

I chose to do most of the analysis on quarter-aggregate data, to smooth out differences between individual editions of Qiushi that might have been focused on a particular topic, and to line up with real-world economic data. However, the volume of articles published in a quarter varies vastly between Qiushi and Aisixiang, and varies substantially from quarter to quarter even within a publication, as indicated by the graphs in Figure 1.

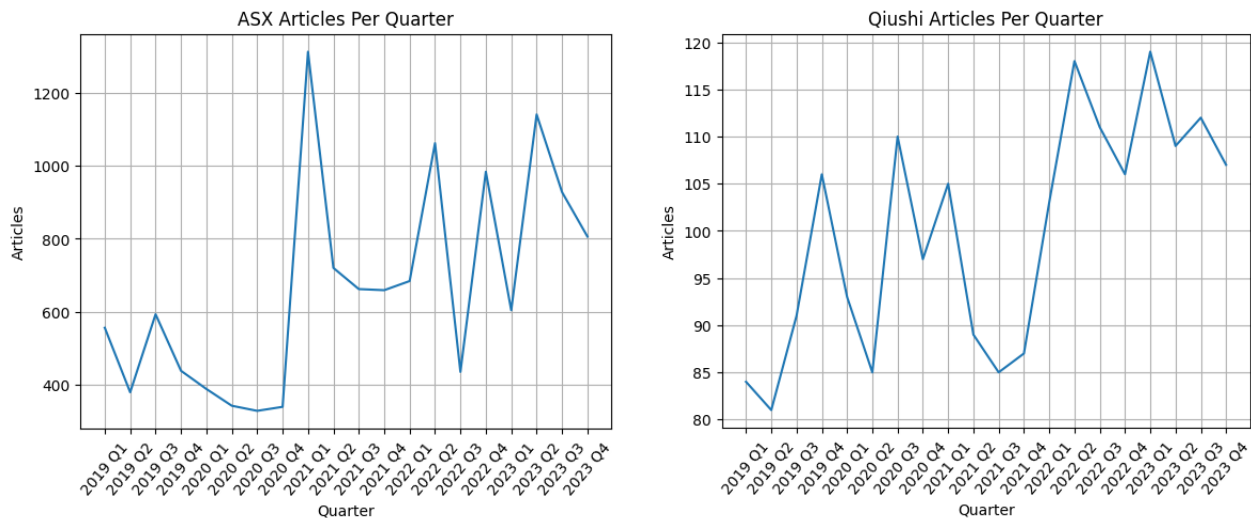


Figure 1: Publication volume for Aisixiang (ASX) and Qiushi from 2019 Q1 to 2023 Q4.

Qiusi had a mean of 99.9 and standard deviation of 12.1 articles per quarter. ASX had a mean and standard deviation of 668.1 and 290.7 articles, respectively. The standard deviation of ASX relative to its mean is much larger than that of Qiusi. Hence, when simply looking at something like the instance count of a given term each quarter, a direct comparison would likely be misleading if far more articles were published in one quarter than in the other. To make comparisons between quarters and publications more meaningful, I standardized frequency counts of terms by dividing the total appearances of the term in the quarter by the number of articles published in that quarter.

## Authors

It is worth considering who is writing in these publications, particularly Qiushi. Who plays the largest role in shaping the messages that are being broadcast to and studied by CCP members?

Extracting author information was relatively easy for ASX, but fairly difficult for Qiushi. Qiushi did not have a consistent way of listing the authors information – one or many names, titles or no titles, individuals or organizations, etc. Hence, I crafted a ChatGPT query that I tested on a number of different formats, so it would return the names of the authoring individuals/organizations (and nothing else) in a consistent format.

Even though a simple count of articles written by a given author may be a somewhat crude method of measuring importance, it may nonetheless be instructive. Below are the results for ASX and Qiushi, with a delineation drawn between individual authors and pieces written by organizations.

Qiushi Top Individual Authors		Qiushi Top Authors		Aisixiang Top Authors	
	Articles		Articles		Articles
习近平	120	习近平	120	蒙培元	437
同心	14	《求是》杂志评论员	76	陈艳萍	239
宁吉喆	13	《求是》杂志编辑部	72	曲青山	129
巨力	12	本刊编辑部	47	刘尚希	128
梁佩韵	12	新华社记者	38	贺雪峰	126
侯亚景	12	本刊评论员	19	朱汉民	124
王毅	11	同心	14	郑永年	123
曲青山	10	宁吉喆	13	徐勇	123
黎海华	10	巨力	12	贾康	123
狄英娜	10	梁佩韵	12	黄朴民	121

Table 2: Top 10 authors and number of articles written across three different categories from 2019-2023.

### Qiushi Authors:

- 习近平 Xi Jinping: General Secretary of the CCP.
- 同心 Tong Xin: Internet searches did not reveal any information on his background.
- 宁吉喆 Ning Jizhe: A Chinese economist and senior official currently serving as the director of the National Bureau of Statistics of China and Vice Chairman of the National Development and Reform Commission (minister-level rank). [Source](#)
- 巨力 Ju Li: Internet searches did not reveal any information on his background.
- 梁佩韵 and 侯亚景: Qiushi Magazine Journalists
- 王毅 Wang Yi: Chinese diplomat and politician who has been serving as Director of the Chinese Communist Party Central Committee Foreign Affairs Commission Office since January 2023, and as Minister of Foreign Affairs of China since July 2023. [Source](#)



- 曲青山 Qu Qingshan: Chinese politician currently serving as president of the Institute of Party History and Literature of the Central Committee of the Chinese Communist Party. He is a member of the 19th Central Committee of the Chinese Communist Party. [Source](#)
- 黎海华 and 狄英娜: Qiushi Magazine Journalists

#### Aisixiang Authors:

- 蒙培元 Meng Peiyuan: Contemporary renowned philosopher and historian of Chinese philosophy. He has served as a researcher at the Institute of Philosophy of the Chinese Academy of Social Sciences, a professor at Peking University, and director of the Chinese Philosophy Research Office. He has been a visiting professor at Columbia University, Harvard University, the Institute of Literature and Philosophy of the Academia Sinica in Taiwan, and the Chinese University of Hong Kong. [Source](#)
- 陈艳萍 Chen Yanping: Writes short stories and essays. [Source](#)
- 曲青山 Qu Qingshan: See above under Qiushi.
- 刘尚希 : Current secretary and president of the Chinese Academy of Fiscal Sciences. PhD in Economics from Renmin University. He serves as a member of numerous consultative committees of national ministries and local governments. [Source](#)
- 贺雪峰 He Xuefeng: Professor in the School of Sociology at Wuhan University and the director of the China Rural Governance Research Center at Wuhan University. His main research interests are rural governance studies and rural construction practice. [Source](#)
- 朱汉民 Zhu Hanmin: Dean of the School of Chinese Classics at Hunan University's Yuelu Academy. He also serves as Vice Chairman of the International Confucian Association, President of the Chinese Academy Society, and in a host of other roles. He has been a visiting professor in France, the U.S., and Taiwan. [Source](#)
- 郑永年 Zheng Yongnian: Chinese political scientist and political commentator who has studied and written on contemporary China and especially on Chinese politics. Zheng joined the Chinese University of Hong Kong, Shenzhen in September 2020 and was appointed Director of the Advanced Institute of Global and Contemporary China Studies. He was a professor and director of the East Asian Institute, National University of Singapore since 2008 until his resignation in 2020. [Source](#)
- 徐勇 Xu Yong: Honorary Dean of the China Rural Development Institute at Central China Normal University, Director of the Center for Rural Issues Research, Distinguished Professor at Hunan Normal University. He is also the member of multiple Ministerial advisory committees. He is primarily engaged in research on grassroots politics and rural governance. [Source](#)
- 贾康 Jia Kang: Member of the 11th and 12th National Committee of the Chinese People's Political Consultative Conference, a member of the Chinese People's Political Consultative Conference Economic Committee, chief economist of the China New Supply Economics Research Institute, researcher and doctoral supervisor of the China Academy of Fiscal Sciences. [Source](#)

- 黄朴民 Huang Pumin: Professor at the School of Chinese Classics, Renmin University of China, and director of the library. He is a director of the Chinese Historical Society, an executive director of the Chinese Library Association. His main research interests lie in the history of Chinese thought and military history.

[Source](#)

The author makeup of Qiushi and Aisixiang are in line with expectations for a CCP magazine and prominent think tank. The Qiushi writers actually line up perfectly with current CCP priorities in a great display of internal consistency. Xi Jinping is the top writer by far in Qiushi, underscoring his core mission of realigning the party around his new ideology, “Xi Jinping Thought.” Aside from staff writers and those for who no information is available, the other top three individual authors are Ning Jizhe, Wang Yi, and Qu Qingshan (interestingly, the only individual to be a top writer in both Qiushi and Aisixiang). Ning Jizhe is an economist tied to the National Development and Reform Commission, in line with Beijing’s emphasis on economic growth. A more assertive foreign policy is also key to Beijing’s aims: cue Wang Yi, the PRC’s chief diplomat. And foundational to all of this is what might be called the Chinese version of Manifest Destiny, of China rising to fulfill their rightful role as leader of the “community of common destiny for mankind” (人类命运共同体). This vision relies on the Chinese people seeing themselves and their collective story in a certain way – enter Qu Qingshan, president of the Institute of Party History.

The Aisixiang authors come from stricter academic backgrounds, but still have strong ties to the government. Authors include prominent professors in fields of philosophy, history, economics, law, and political science. Some of them also have significant overseas exposure as a result of graduate work or visiting professor positions.

## Key Topics

Another point of interest is the key topics within each publication. We can get some insights into overall topics using Latent Dirichlet Allocation (LDA). LDA is an unsupervised machine learning approach that discovers topics within a text, where each topic is based on an underlying set of words. However, it is not clear ex-ante how many topics should be calculated for a given corpus. Training LDA models on the Qiushi corpus with different numbers of topics yielded the following coherence score graph:

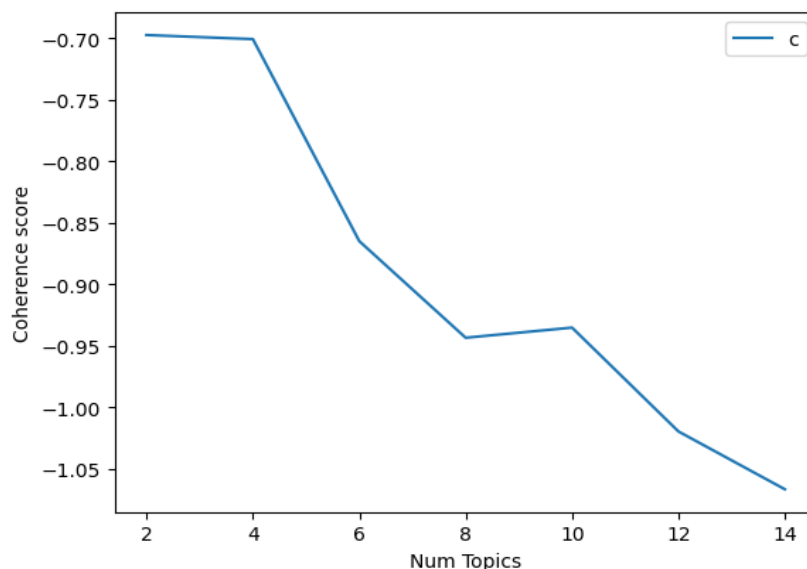


Figure 2: Coherence score as a function of number of topics.

It appears that the number of topics with the highest average coherence is two, but four is essentially the same and yields more information, so I ran it again with four topics. The results of this LDA are found in Table 3.

These topics have a high degree of internal consistency – the first deals with COVID-19, and measures taken to deal with it. The second concerns China’s economic development, particularly in the technology sectors. The phrase 高质量发展, the first part of which (高质量) appears in topic 2, means “high-quality development,” and has been a key slogan in the last few years. In topic 3, we see the more ideological piece of Qiushi, with a focus on Marxism, struggle, and revolution. Finally, extending the economic growth to rural areas and pulling more Chinese out of poverty is a key priority of the CCP.

For easy comparison, I also used 4 topics when running LDA on the ASX articles, but simply increased some of the parameters to reflect that ASX is about seven times larger than Qiushi. The results for ASX are found in Table 4. Given that Meng Peiyuan, ASX’s most prolific writer, is a philosopher, it is not surprising that topic 1 (order is not significant) relates to philosophy. With topic 2, we see an intersection of legal and political discussions. Topic 3 seems to reflect economic considerations, with emphasis on rural matters. The fourth topic broadly seems to deal with the international order.

Topic 1			Topic 2		
Score	Term	Translation	Score	Term	Translation
0.009	疫情	pandemic	0.007	科技	technology
0.007	教育	education	0.006	加快	accelerate
0.007	法治	govern by law	0.005	高质量	high-quality
0.006	防控	prevent and control	0.004	产业	industry
0.005	干部	cadre	0.004	全球	global
0.004	疫情_防控	pandemic prevention and control	0.004	企业	enterprise
0.004	完善	perfect	0.004	增长	increase
0.004	监督	supervise	0.004	合作	cooperation
0.004	治理	administer	0.004	安全	safety
0.004	落实	implement	0.003	促进	boost
Topic 3			Topic 4		
Score	Term	Translation	Score	Term	Translation
0.007	马克思主义	Marxism	0.007	脱贫	lift out of poverty
0.005	革命	revolution	0.006	生态	ecology
0.004	民族	national	0.004	文明	civilization
0.004	百年	100 years	0.004	保护	protect
0.003	奋斗	struggle	0.004	扶贫	aid the poor
0.003	道路	path	0.003	村	village
0.003	人类	humankind	0.003	攻坚	tackle a problem
0.003	自信	confidence	0.003	乡村	village
0.003	斗争	struggle; strive for	0.003	脱贫_攻坚	tackle poverty
0.003	毛泽东	Mao Zedong	0.003	产业	industry

Table 3: Terms and weighting from 4-topic LDA analysis on Qiushi. These four topics had an average coherence score of -0.68.

Topic 1			Topic 2			Topic 3			Topic 4		
Score	Term	Translation	Score	Term	Translation	Score	Term	Translation	Score	Term	Translation
0.0062	哲学	philosophy	0.0086	社会主义	socialism	0.0061	政府	government	0.0086	美国	U.S.
0.0037	页	page	0.0076	法律	law	0.0057	市场	market	0.0052	日本	Japan
0.0035	道德	moral	0.0073	人民	the people	0.0055	企业	enterprise	0.0045	法律	law
0.0032	自然	natural	0.0063	民主	democratic	0.0043	改革	revolution	0.0043	行为	behavior
0.0030	儒家	Confucian	0.0062	法治	rule of law	0.0041	农村	farmland	0.0039	规定	rules
0.0030	佛教	Buddhism	0.0060	宪法	constitution	0.0041	技术	technology	0.0024	行政	executive
0.0028	道	the Way	0.0055	治理	adminster	0.0039	增长	grow	0.0023	国际	international
0.0027	价值	value	0.0052	体系	system	0.0038	农民	famers	0.0023	刑法	criminal law
0.0027	讲	speak	0.0049	党	political party	0.0038	土地	land	0.0021	当时	then
0.0026	孔子	Confucious	0.0048	现代化	modernization	0.0035	城市	city	0.0021	战争	war
0.0026	先生	mister	0.0047	西方	the West	0.0035	政策	policy	0.0020	香港	Hong Kong
0.0026	人类	humankind	0.0046	建设	construct	0.0034	生产	produce	0.0019	政府	government
0.0024	理性	rational	0.0042	权力	authority	0.0033	农业	farming	0.0018	组织	organization
0.0023	生命	life	0.0040	民族	national	0.0031	建设	construct	0.0018	页	page
0.0021	知识	knowledge	0.0038	实践	put into practice	0.0030	我国	China	0.0018	利益	profit
0.0020	宗教	religion	0.0037	文明	civilization	0.0029	收入	income	0.0017	条	NA
0.0020	自由	freedom	0.0037	权利	rights	0.0029	美国	U.S.			
0.0020	性	ness	0.0035	现代	modern	0.0028	资本	capital (finance)			
0.0019	西方	the West	0.0035	特色	special	0.0027	全球	global			
0.0019	概念	concept	0.0033	全面	completely	0.0027	地方	place			

Table 4: Terms and weighting from 4-topic LDA analysis on ASX.

There are a few interesting differences between their key topics. As noted above, with Qiushi, the topics are tight and closely aligned with CCP priorities. With a much greater volume and variety, one would expect Aisixiang to differ, and it does. Given this greater variety, I also ran a 10-topic LDA analysis of Aisixiang to try and see what other topics were identified. The pandemic, one of the key topics in Qiushi, never appeared as a coherent topic in Aisixiang – it was only mentioned once as part of a set of terms broadly dealing with the economy. Given the existential threat to the CCP that COVID-19 posed (clearly seen in the widespread protests and the sharp policy reversal that resulted), it makes sense that it would receive far more attention from CCP thinkers.

# Economy

## Frequency Analysis

Economy is fairly significant word in both Qiushi and Aisixiang. Thankfully, Chinese does require lemmatization or stemming, so a simple text search for “经济” allows us to find usage of economy in any form. As noted above in the publication volume section, the number of articles per quarter varies within and between Qiushi and Aisixiang. Hence, I first present the unstandardized counts, and then share a combined graph that has standardized the counts by number of articles in a given quarter.

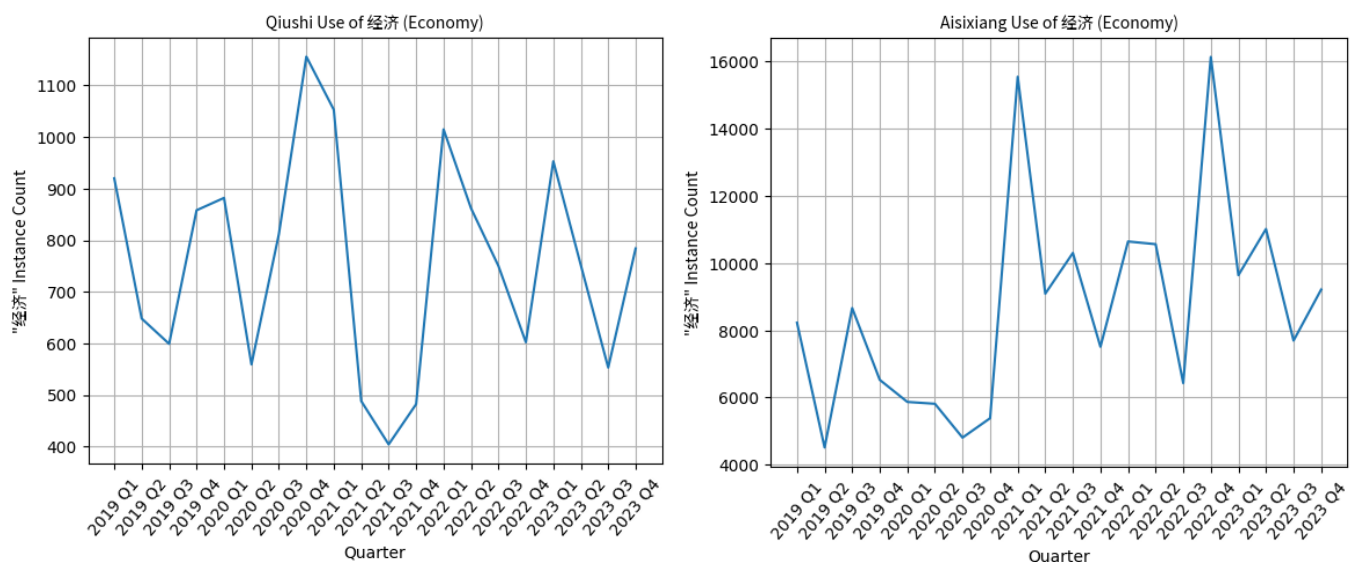


Figure 3: Instance count of “economy” in Qiushi and Aisixiang.

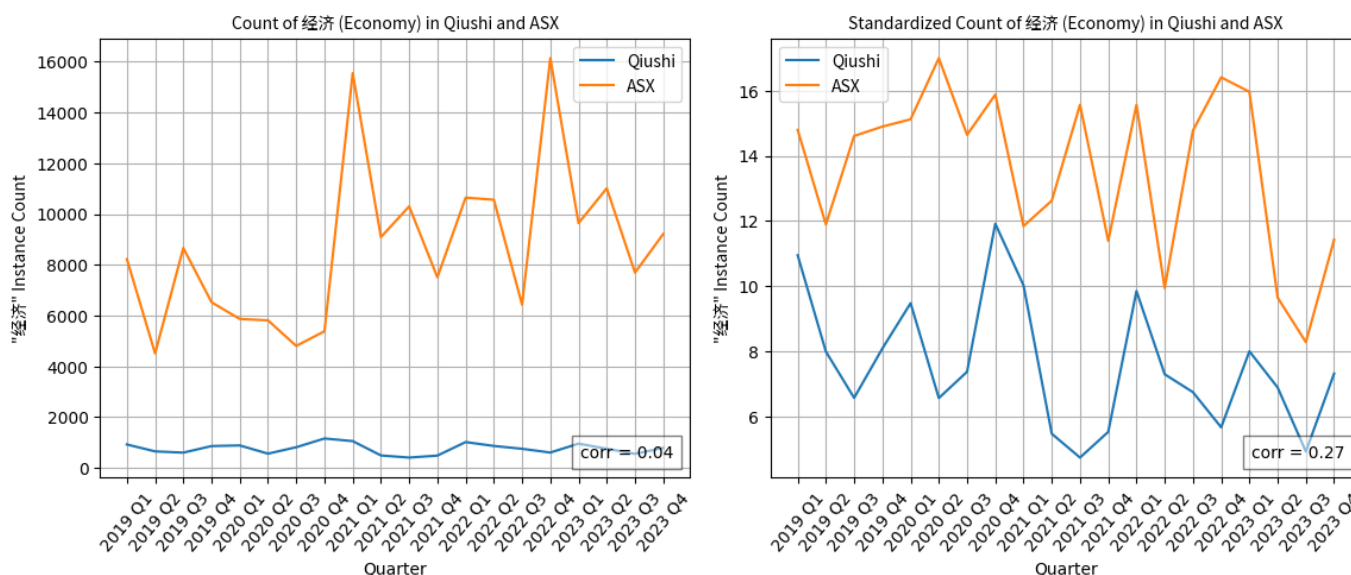


Figure 2: The left graph shows the unweighted combination of Qiushi and Aisixiang counts. The standardized combination is shown on the right.

Interestingly, unstandardized frequency counts are essentially uncorrelated, but standardized counts have some degree of correlation. This could suggest that Aisixiang is following Beijing's lead. However, it may also be random, or there could be something underlying both of their behaviors. Performing a regression of the Aisixiang count of economy on the Qiushi count and a lagged count (the previous quarter) indicates that the correlation between the two is statistically significant, but only at the 10% level (see Table 5). As an aside, all of the following regressions were performed with heteroskedasticity and auto-correlation robust standard errors, with a lag of 2 (a lag of 4 did not yield substantially different results). Unfortunately, this does not offer any insights into the underlying cause for the correlation, but it is unlikely to be randomly caused.

	<b>ASX Econ Count</b>
<b>Intercept</b>	13.08*** (2.98)
<b>QS Econ Count</b>	0.42* (0.24)
<b>Lagged QS Econ Count</b>	-0.35 (0.21)
<b>R-squared</b>	0.14
<b>R-squared Adj.</b>	0.03

Standard errors in parentheses.

\* p<.1, \*\* p<.05, \*\*\*p<.01

Table 5: Results of regressing Aisixiang's count of economy on the current and previous quarters' economy counts in Qiushi. Their correlation is significant at the 10% level.

	<b>Term Count - QS</b>	<b>Term Count - ASX</b>
<b>Intercept</b>	9.67*** (0.43)	14.65*** (0.65)
<b>Quarter 2</b>	-2.81*** (0.52)	-2.43 (1.43)
<b>Quarter 3</b>	-3.58*** (0.61)	-1.08 (1.45)
<b>Quarter 4</b>	-1.95* (1.01)	-0.66 (1.26)
<b>R-squared</b>	0.47	0.13
<b>R-squared Adj.</b>	0.37	-0.03

Standard errors in parentheses.

\* p<.1, \*\* p<.05, \*\*\*p<.01

Table 6: Results of regressing count of economy on the quarters to test for a statistically significant cyclical pattern. Such a pattern appears to exist for Qiushi, but not for Aisixiang.

There appears to be a cyclical nature to the frequency counts, especially for Qiushi. Running a regression of Qiushi's standardized instance count on the quarters, I find statistically significant coefficients (see Table 6). Thus, it is unlikely that this cyclical nature is due to randomness. However, the coefficients on the regression for Aisixiang are not statistically significant, so variation there could be essentially random.

One final trend of interest: the standardized frequency count of economy is decreasing over time, in a way that looks almost parallel (from the regression, the slopes are -0.14 and 00.17 for QS and ASX, respectively). This is seen more clearly in Figure 5. The coefficient on the Qiushi line is statistically significant at the 1% level, so this decline is likely not random, and instead reflects a decreasing focus on the economy, at least as measured by word frequency. As China's economy continues to underperform and the focus shifts to national security, this trend is to be expect.

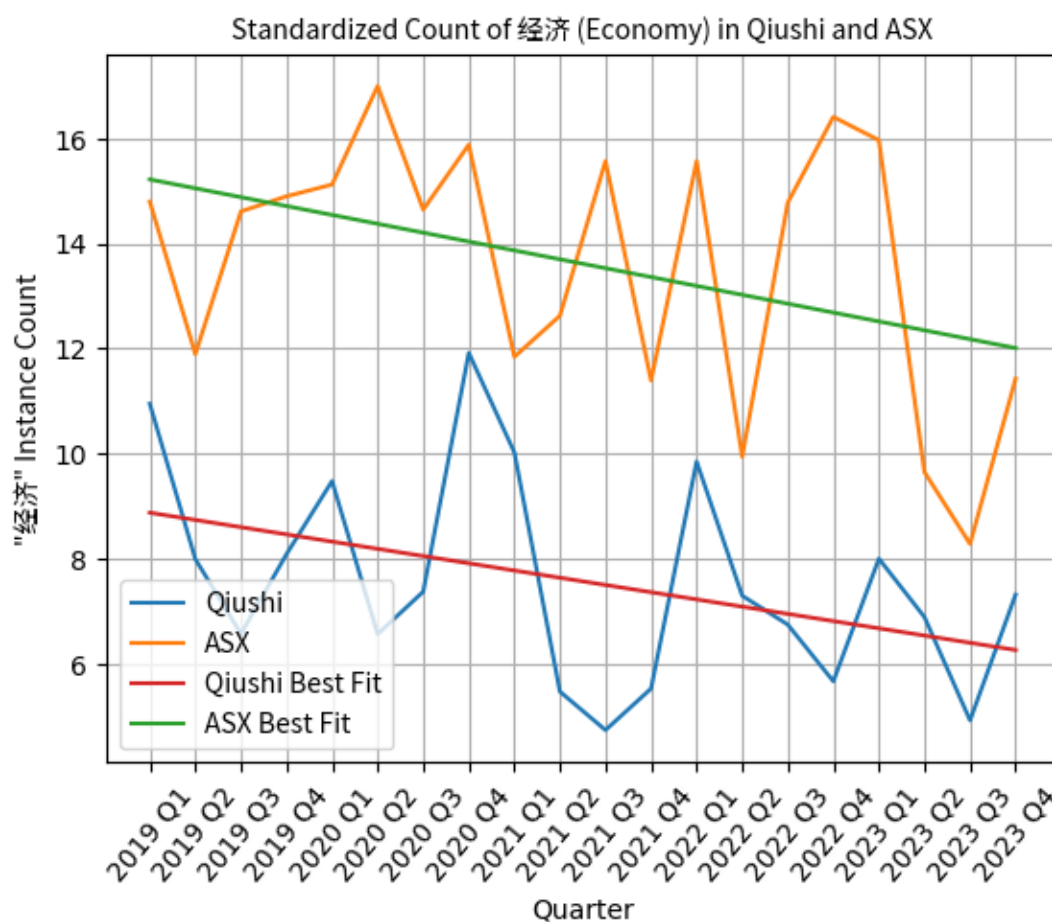


Figure 4: Standardized counts of economy plotted with lines of best fit. The slopes coefficients for Qiushi and Aisixiang are -0.14 and -0.17, respectively. QS's coefficient is significant at the 1% level.

To summarize, it is not clear if Aisixiang follows Beijing's lead in the focus they give the key issue of the economy in a given quarter. Their focus does not vacillate in a predictable way between quarters of the year. However, Qiushi's focus on the economy does appear to be tied in a significant way to the quarters of the year. For both of them, the



focus on the economy (at least as indicated by instance count) appears to be decreasing over time.

## Sentiment Analysis

Another point of interest is the outlook that both publications have on the economy – is it positive, negative, or mixed? Have attitudes changed over the last few years as China’s economic outlook has declined? And to what extent do they mirror each other?

Unfortunately, there are not small-scale models capable of analyzing the sentiment of an entire Chinese article in one piece. Exploring the models available on HuggingFace, Lik Xun Yuan’s distilled Multilingual Sentiment [model](#) appeared to be a reasonable fit. At the time of writing (April 2024), the model had over two million downloads in the previous month, suggesting it is reasonably robust. The model has a maximum sequence length of 512 tokens, so I split the articles into a list of sentences. Iterating over all the articles, I calculated the sentiment for each sentence containing the term and added these scores to a list. If a sentence included the term  $n$  times, I duplicated the score for that sentence  $n$  times in the list, thus giving more weight to the sentiment of sentences that are more focused on that topic. I then averaged all the sentences within a given quarter to get the overall sentiment for the quarter.

There are obvious limitations to this method. A model that only looks at single sentences misses the broader context. Additionally, I am not confident that the model is capable of capturing all the nuance of the language – in a Leninist system, critical remarks about government policy or priorities are likely to be heavily veiled and indirect. Hence, the sentiment levels obtained through this method are likely not correct in absolute terms, but they should be approximately correct, and the relative levels of sentiment scores between quarters should be correct, since the methodology applied to each is constant.

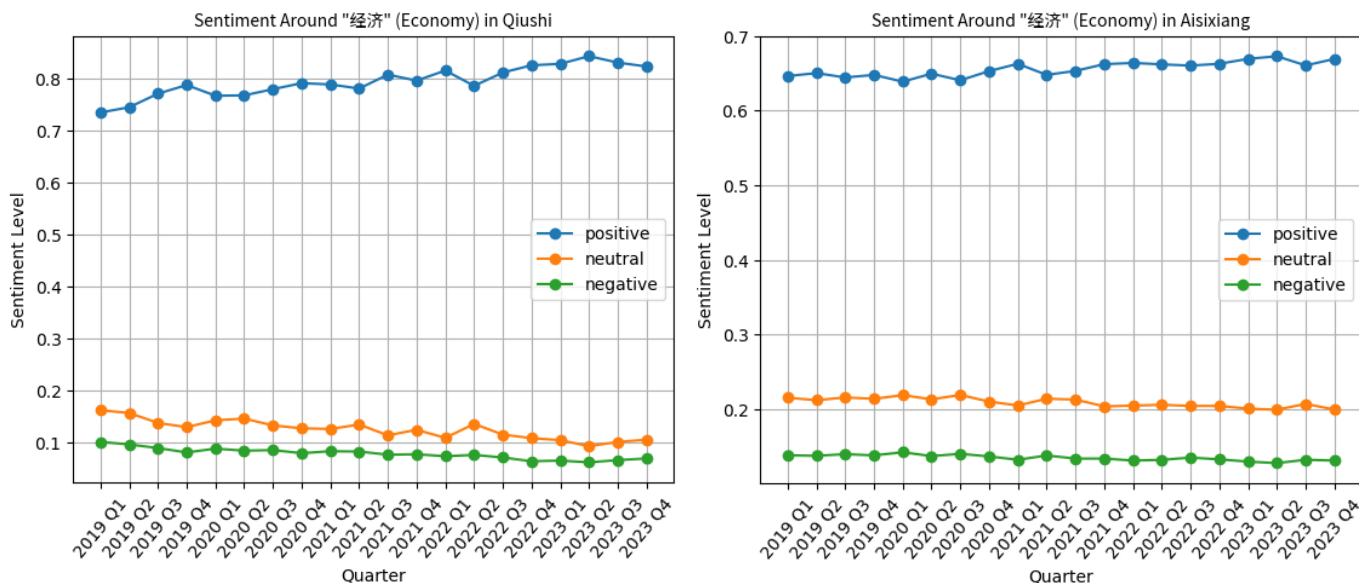


Figure 6: Sentiment Around Economy in Qiushi (left) and Aisixiang (right).

Unsurprisingly, the sentiment around economy in both Qiushi and Aisixiang is overwhelmingly positive. Values for Aisixiang appear to be essentially stagnant, with an ever-so-slight upward trend for positive sentiment and corresponding downward trend of neutral views. The trend is much more noticeable for Qiushi – positive sentiment increases by about 10% over the course of 5 years, mostly made up of a decrease in neutral sentiment. In light of China’s recent economic struggles, particularly as a result of COVID-19 lockdowns, it is interesting that the CCP not only does not appear to openly acknowledge economic challenges, but instead gets even more positive in their messaging to party cadres.

In terms of whether Aisixiang is following Beijing’s lead, it does not appear that they are – as mentioned before, their sentiment values barely budge, and it is hard to argue you are following someone if you don’t move. However, it is worth noting that the relative sentiment levels between Aisixiang and Qiushi differ in non-trivial ways. There was a ~7% gap in positive sentiment at the start of 2019, which grew to a ~14% gap by the end of 2023. Neutral sentiment also has an end-of-period difference of about 10%. Neither is speaking plainly about current struggles, but this suggests that Aisixiang is more nuanced in their economic outlook.

## Contemporary Economic Data

A final topic, unique to the economy specifically – how responsive is the Qiushi narrative to economic trends? I assess this by plotting frequency against quarterly economic data.

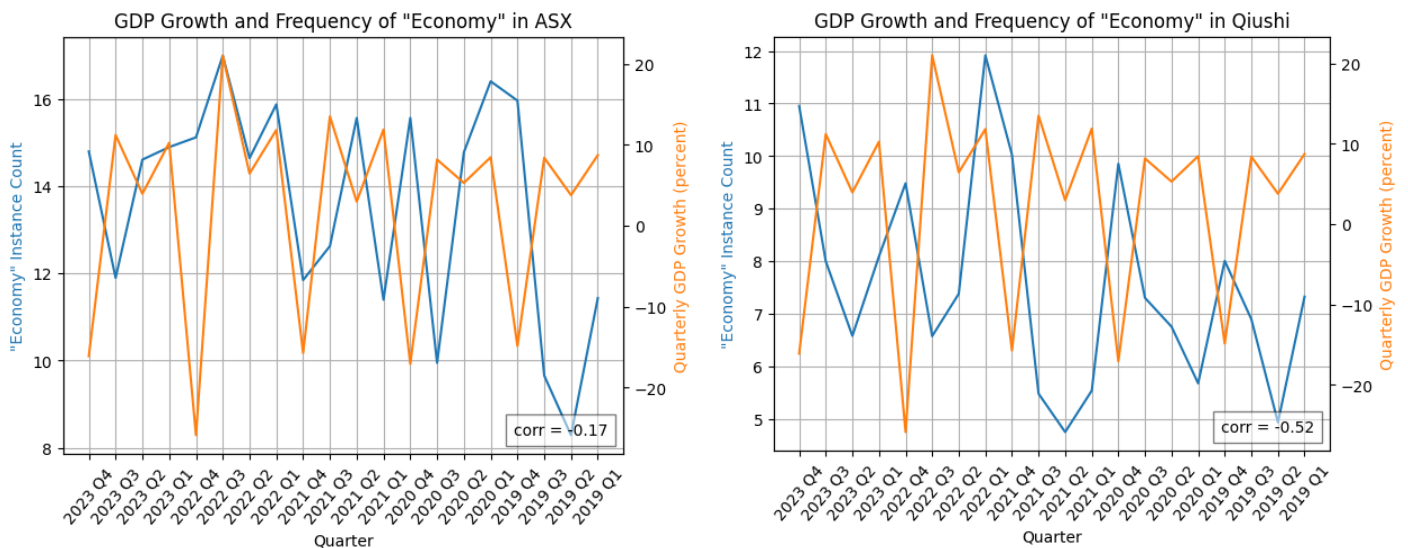


Figure 7: Graph of quarter-to-quarter GDP growth against same-quarter “economy” frequency counts in both Aisixiang and Qiushi. Instance counts are standardized as discussed in the Frequency section.

Plotting frequency of both of them against the economic data, we see that they are negatively correlated. However, quarterly economic figures are not available until after the quarter ends, so I also create a graph with quarterly GDP growth data lagged by one period.

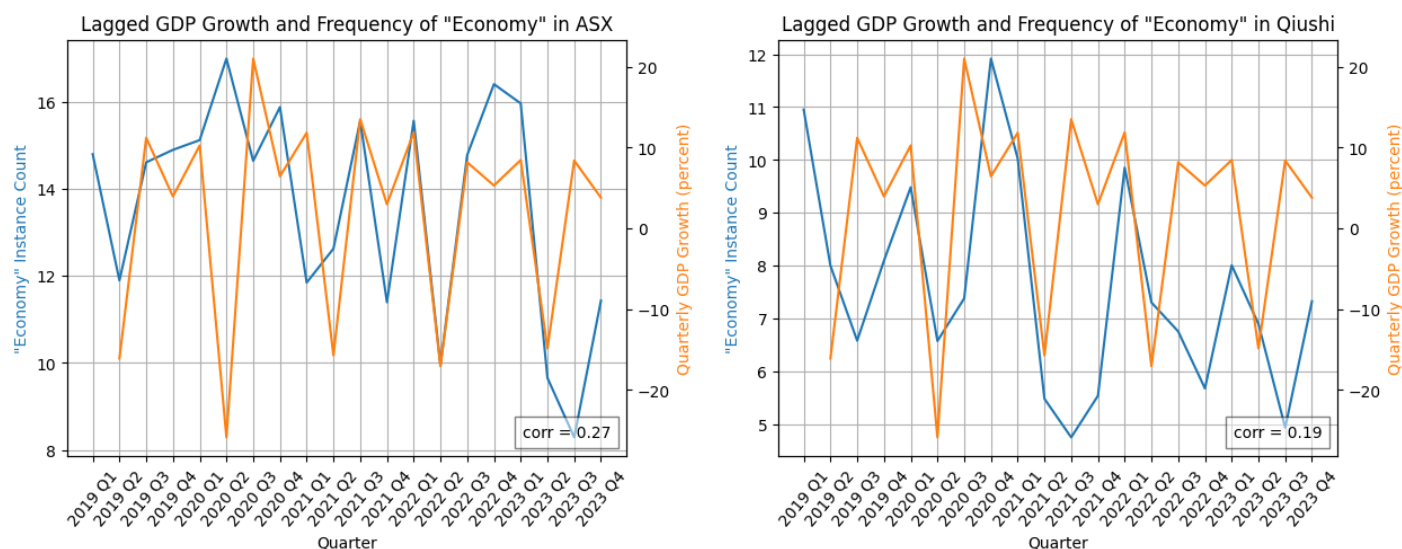


Figure 8: Graph of quarter-to-quarter GDP growth against previous-quarter "economy" frequency counts in both Aisixiang and Qiushi. Instance counts are standardized as discussed in the Frequency section.

Lagging by one period, the correlation coefficients change from being negative to positive. However, this correlation is not statistically significant for Aisixiang. It is statistically significant for Qiushi, conditional on the quarter, which matches the results found above in the frequency section that indicate Qiushi discussion of the economy varies quarterly.

We have already seen that the sentiment around the economy is moving slowly but surely in the positive direction for both Qiushi and Aisixiang, so it will not respond to the quarterly shocks in economic growth. Hence it appears that the only potential connection between quarterly economic growth (which is only a short-term indicator of economic health) and discussion of economy in Qiushi or Aisixiang is that Qiushi appears to talk about the economy more when it is doing well.

## BRI and Global Initiatives

The Belt and Road Initiative (BRI) is a massive infrastructure building campaign that Beijing embarked on in 2013, seeking to create a 21<sup>st</sup> century version of the ancient silk road. With extensive investment in projects overseas, it has been a key part of Xi Jinping's foreign policy, allowing China to advance their economic interests and increase their soft power and international legitimacy. However, the BRI is reportedly [on the way out](#). With China's own economic slowdown, this level of outward capital flow (especially when some nations are struggling to repay loans) is no longer sustainable. Instead, Beijing has gradually unrolled three other initiatives in recent years, the Global Development Initiative, Global Security Initiative, and Global Civilization Initiative (GDI, GSI, and GCI, respectively). At least, that's how the theory goes. I want to see to what extent this shift is reflected in Qiushi and Aisixiang.

## Frequency Analysis

Given that we are now concerned with four terms instead of one, this analysis will progress slightly differently than that of "economy." I begin by presenting the standardized counts of the four terms in each publication.

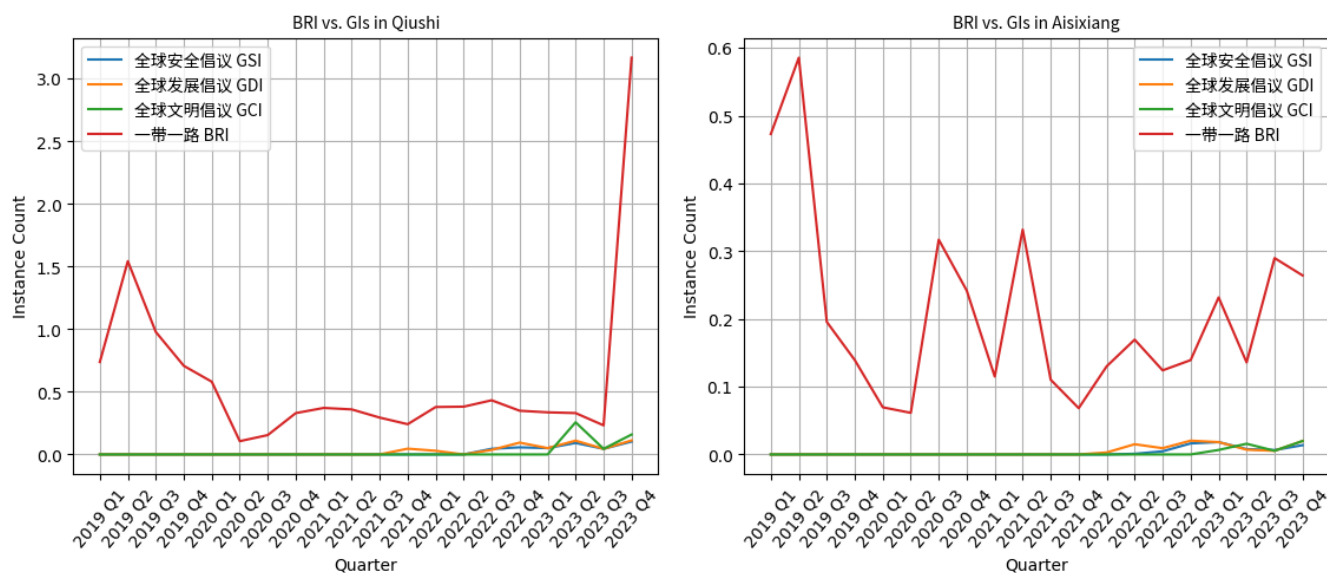


Figure 9: Standardized counts of GSI, GDI, GCI, and BRI in Qiushi and Aisixiang.

Based on this analysis, it appears that the BRI still remains vastly more talked-about in both Qiushi and Aisixiang than the three Global Initiatives combined. This frequency-based analysis alone does not provide insights to how they are talking about the BRI and the other GIs, but if frequency is an appropriate proxy for importance, then the BRI is still far more important than the GIs. However, it may be the case that recent discussion has centered around transitioning away from the BRI. A close reading of the text is required to determine why. I am particularly interested to explore what happened in Quarter 4 of 2023, where the BRI saw a massive jump, and reached a new high over this five-year period.

Similarly, while not as high as previous levels, discussion of the BRI in Aisixiang also appears to be on an upward trend.

COVID-19 may be one of the factors contributing to the shape of the BRI line in Qiushi. Discussion of BRI was already on a downward decline prior to 2020, but it reached a low point and stayed low from 2020 Q2, which is about when COVID-19 really got out of control, and much of the CCP's focus turned inward. COVID-19 restrictions were in place until 2022 Q4, and a year after that BRI finally picked up again. However, I do not have robust evidence for this theory at this time.

## Sentiment Analysis

The frequency of discussion about the BRI has varied dramatically over time, but how has the corresponding sentiment changed? If the recent rise in frequency of discussion has been accompanied by an increase in the negative or neutral sentiments, that may suggest that the BRI is being discussed in a transitional or reflective sense. With a positive sentiment, it is harder to tell – that could also be a positive framing of a past policy as they shift to new policies, or indicate a renewed focus on the BRI.

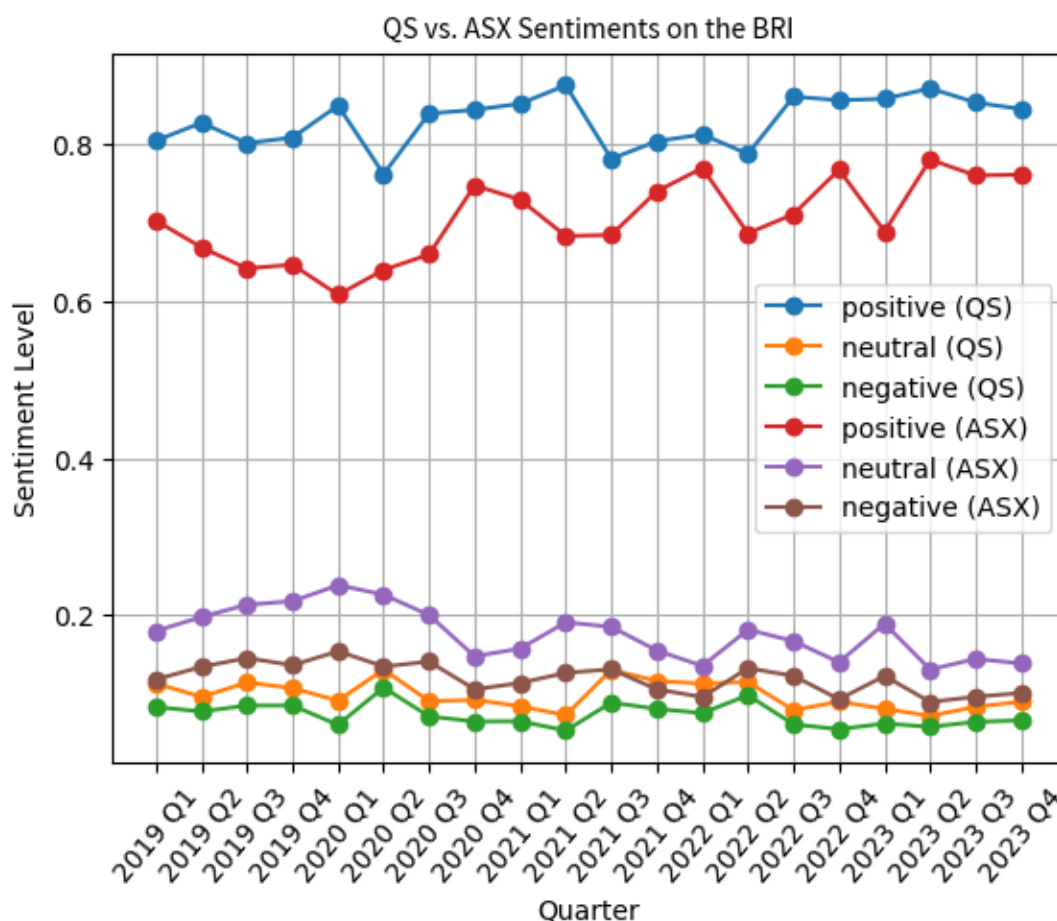


Figure 10: Qiushi and Aisixiang Sentiments around the Belt and Road Initiative.

It appears that sentiment towards the BRI has grown increasingly positive over the last five years. While remaining relatively constant for Qiushi, it has increased almost 20% for Aisixiang from 2021 to the end of 2023, a substantial change. By contrast, the Global Development Initiative (the earliest of the three initiatives, and the one most closely related to the BRI) has consistently had positive sentiment proportions at or above 0.80, until the last quarter of 2023. Whether that is part of a broader downward trend in academia's outlook on the GDI or simply a fluke is not possible to determine until more time has elapsed.

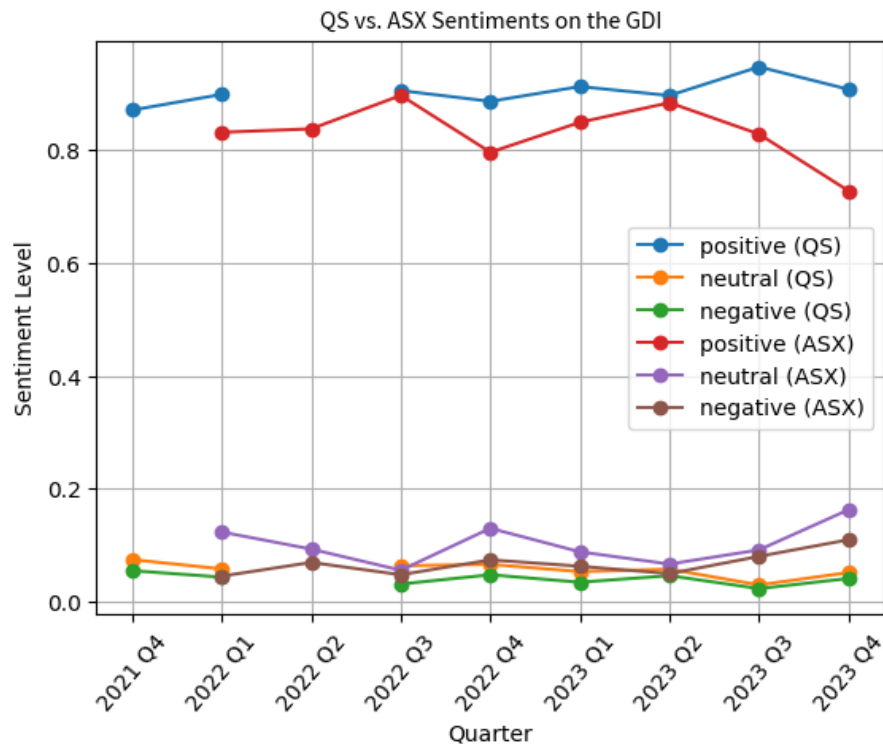


Figure 11: Qiushi and Aisixiang sentiments around the Global Development Initiative.

## Conclusion

In this paper, I have explored Qiushi and Aisixiang using a variety of techniques, including topic analysis, frequency counts, and sentiment analysis. When applied to questions about the economy or elements of China's foreign policy, they have provided interesting insights and raised additional questions. In examining authorship, my analysis shows that Qiushi authors closely reflects current CCP priorities. Examining the economy, it appears that CCP focus on the economy varies seasonally, and may be correlated with economic performance in the previous quarter. Despite the many struggles the Chinese economy faces, positive sentiment is high and growing in Qiushi. Evaluating the importance of the BRI relative to the GIs in both Qiushi and Aisixiang has raised questions about unexpected results, like the dramatic spike in BRI discussion at the end of 2024.

To extract further insights from the texts, additional tools are needed. One metric I would like to implement in the future is a document importance ranking algorithm, that allows analysts to pin down which pieces are the most influential, so they can be targeted for future study. Additionally, tools that unlock more of the context of the key terms and topics being investigated (like how the BRI is being discussed) could be very valuable.

Some of the best insights may come from using these methods to identify areas to delve into the texts. That kind of serious study was beyond the scope of this project, which was primary focused on computational tools that can be leveraged against the texts. Instead, this project has developed a set of basic tools that can be easily extended to other Chinese language texts, or the study of other topics within Qiushi and Aisixiang.